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EXAMINER
WU, JUNCHUN

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE **3** MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>18 May 2009</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>5-10</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>5-10</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a) ☐ All   b) ☐ Some * c) ☐ None of:

   1. ☐ Certified copies of the priority documents have been received.

   2. ☐ Certified copies of the priority documents have been received in Application No. _____.

   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1.   This office action is in response to amendment filed on May 18, 2009.

2.   Claims 5-10 are pending in this application.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

4.   Claims 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over

("PROFIBUS technology and application – system description" Oct. 2002, hereinafter

"PROFIBUS"), in view of Diedrich et al. ("Field Device Integration in DCS Engineering using

a Device Model" hereinafter "Diedrich")

Per claim 5

PROFIBUS discloses

A method for producing software modules for field devices for process automation technology,

wherein the software modules serve as device descriptions and have defined interfaces for

application programs in process control systems (See PROFIBUS page 27 Section 7.3 under

"Device Description as Software Component") comprising the steps of:

But PROFIBUS does not explicitly disclose

- syntactically and semantically correct and producing device descriptions by means of a

    compiler and converting device descriptions into software module by means of a

    compiler.

However, Diedrich discloses

- syntactically and semantically correct (e.g. on page 165, 1st paragraph " *The device*

    description has to be based on a device model, because of the semantic behind the lexical

    and syntactical elements.")

- producing standard device descriptions, from device descriptions for field devices not

    having a uniform form, or language by means of a first compiler or generator (e.g.

    Diedrich discloses on page 168, 3rd paragraph "The DD (device description) is used by

    the interpreter during the interaction of an operator with the field device, e.g. during

    commissioning or maintenance. The operator uses the HMI interface for his interactions,

    which work together with the interpreter and the communication interface. The

    interpreter and the interfaces are PC or hand-held software components used for

    commissioning, visualization, operation and maintenance of field devices.").

- converting standard device descriptions further into corresponding software modules by

    means of a second compiler (e.g. on page 168, 2nd paragraph "*The following tools have to*

    be available (see Figure 7): an editor, a compiler, an interpreter for the handling of the

    device description, and PC Software with the components HMI interface and API

    mapping interface for the use of the Device Description by the operator. The editor is the

    front end to the device manufacturer who provides the machine readable device

> *description. The compiler translates these DDs into the DCOM server format. These two*
>
> *tools will be used in advance of the usage of the device by the device manufacturer.")*

- Therefore, it would have been obvious to a person of ordinary skill in the art at the time

  the invention was made to modify teaching of PROFIBUS with the teachings of Diedrich

  to include syntactically and semantically correct and producing device descriptions by

  means of a compiler and converting device descriptions into software module by means

  of a compiler in order to provide a method for field device offers diagnosis, Maintenance

  and pre-processing functions. (see Diedrich's abstract)

Per claim 6

The rejection of claim 5 is incorporated and PROFIBUS further discloses

- interfaces and the software modules meet the FDT/DTM specifications

  (PROFI BUS Guideline -Order No. 2.162 "Specification for Profibus Device

  Descriptions and Device Integration", Volume 3) (See PROFIBUS page 27 Section 7.3

  "The FDT Interface" & *"DTM (device type manager) is integrated in the engineering*

  tool or control system over the FDT interface.").

Per claim 7

The rejection of claim 5 is incorporated and PROFIBUS implicitly discloses

- the standard device descriptions are one of: PDM device descriptions, HCF

  device descriptions or company-specific device descriptions (In the ordinary skill of art,

  PDM (Process Device Manager) is an universal tool for configuration, parameter

  assignment, commissioning, diagnostics and maintenance of intelligent field devices and

  automation components and also HCF (HART® Communication Foundation) standard

  device description is a comprehensive set of software tool for development, testing and

  maintenance of HART device descriptions. Those tools are well known and may use in

  PROFIBUS).

Per claim 8

The rejection of claim 5 is incorporated and PROFIBUS further discloses

device description is an EDD 1.1 device description (PROFIBUS Guideline -Order No. 2.162

"Specification for Profibus Device Descriptions and Device Integration", Volume 2) (See

PROFIBUS page 27 Section 7.2 *"The specification of the EDDL is an integral component of the*

international standard IEC 61804.").

Diedrich discloses

syntactically and semantically correct (e.g. on page 165, 1st paragraph " *The device description*

has to be based on a device model, because of the semantic behind the lexical and syntactical

elements.")

Per claim 9

The rejection of claim 8 is incorporated and PROFIBUS further discloses

- comprising the step of: producing the EDD 1.1 device descriptions PDM device descriptions (In the ordinary skill of art, PDM (Process Device Manager) is an universal tool for configuration, parameter assignment, commissioning, diagnostics and maintenance of intelligent field devices and automation components. The tool is well known and may use in PROFIBUS).

Per claim 10

The rejection of claim 8 is incorporated and PROFIBUS further discloses

- comprising the step of: using the second compiler to produce graphical user interfaces in XML language from the EDD 1.1 device descriptions (on page 31 *"The component editor interface generates the component description in the form of an XML file whose configuration and contents are defined in the PROFInet specification."*)

Response to Arguments

Applicant's arguments filed on May 18, 2009 have been fully considered but they are not persuasive.

- In the remarks, Applicant argues that:

(a)   Applicant argued that reference Diedrich does not refer to a method for producing software module for field appliances.

(b)   Applicant argued the currently amend claim that the device descriptions for field devices not having a uniform form, or language by means of a compiler or generator.

Examiner's response:

Examiner disagrees.

(a)   In abstract of Diedrich "This paper describes the requirements for a device model and the its use from different agents of the DCS or supervision system. The device model is specified in the object-oriented technique (with parts of UML). The device model is compared with existing Device Description Languages on the market like HART DDL (DDL- Device Description Language), PROFIBUS Device Descriptions and Foundation Fieldbus DDL. The device model is used by tools which transform the electronic data sheets from the field devices to the interfaces of the DCS systems. This paragraph describes "The device model is specified in the object-oriented technique" which means device model related to software module. In addition, on page 167 section IV, Diedrich discloses *"The kernel of the current device description technology is therefore to define a common device model."* which covers software modules server as device descriptions in the claim preamble. Furthermore, on page 165 section II, Diedrich discloses *"The typical device is a compact one in the area of process control..."*. Thus, the corresponding device model is described above in Diedrich where those disclosures are relevant to the present invention.

(b)   Diedrich discloses on page 168, 3rd paragraph "The DD (device description) is used by the interpreter during the interaction of an operator with the field device, e.g. during commissioning or maintenance. The operator uses the HMI interface for his interactions, which work together with the interpreter and the communication interface. The interpreter and the interfaces are PC or hand-held software components used for commissioning, visualization, operation and maintenance of field devices." Refer to Fig. 7, producing standard device

descriptions, from device descriptions for field devices <u>not</u> having a uniform form, or language by means of a first compiler or generator.

Conclusion

5.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUNCHUN WU whose telephone number is (571)270-1250. The examiner can normally be reached on 8:00-17:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Zhen can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JW
/Wei Y Zhen/

Supervisory Patent Examiner, Art Unit 2191